



S00105648  
SUPERFUND RECORDS

**MID-AMERICA REFINERY COMPANY (MARCO)**

FPN: 088040

Comprehensive Removal Plan - 8 March 1999

# 105286

|        |                      |
|--------|----------------------|
| Site:  | Mid America Refinery |
| ID #   | KSD084091545         |
| Break: | 2.4                  |
| Other: | 3-8-99               |

**PURPOSE:**

The MARCO removal actions are authorized under Section 311© of the Federal Water Pollution Control Act ("Clean Water Act") as amended by the Oil Pollution Act of 1990, which allows for the removal of oil-contaminated materials and debris to mitigate or prevent a substantial threat of a discharge of oil.

The MARCO site is an abandoned oil refinery inclusive of the crude oil gathering lines which belonged to the refinery and were abandoned in the mid 1970s. The refinery was abandoned in 1981, leaving 138 onsite tanks (many of which still contained petroleum materials) to deteriorate. Both aboveground and underground piping were left with petroleum materials in them when the refinery shut down. Old memos found at the refinery, indicate that the piping and tanks leaked throughout the operation of the refinery. Soils on this site are heavily contaminated with petroleum material. The refinery sits on a slope with a gradient difference of 30 feet from the west to the east side of the site. The east side of the site has a drainage ditch which collects all refinery runoff and carries it through wetland areas to Village Creek and the Neosho River. These factors pose:

- i. A substantial threat of a discharge of oil into or on navigable waters and/or the adjoining shorelines of navigable waters; and/or
- ii. A substantial threat of a discharge of oil of such a size or character as to be a substantial threat to the public health or welfare of the United States.

**BACKGROUND:**

The Mid-America Refinery Company in Chanute, Kansas, is a 25-acre abandoned oil refinery. This facility operated as a crude oil processor from 1934 until 1981. During full production, MARCO processed approximately 2,800 barrels per day of crude oil stock. This stock was refined into diesel fuel, jet fuels, gasoline, oil and kerosene. The remaining crude bottom products were used to make asphalt.

An initial site investigation conducted by Kansas Department of Health and the Environment indicated that at least 40% of the 138 tanks that were on-site had inadequate diking. Surface soil samples found total petroleum hydrocarbon contamination up to 165,400 milligrams per kilogram (mg/kg). Excessive runoff and pools of oily water were noted throughout the site during heavy precipitation.

The property was bought by a trustee of the Robert Cooley Trust Fund in January 1994. Mr. Robert Moore is presently the trustee. Numerous Unilateral Administrative Orders (UAOs) have been issued to the trustee to clean-up this site. These UAOs have not been successful in



motivating the trust to clean-up the site.

A Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (CERCLA) clean-up was conducted from August 1994 - March 1995. At that time asbestos was removed from tanks and pipes. Abandoned drums and containers of hazardous waste were collected, sampled, and transported off-site for disposal. The contents of the oil-water separator were excavated, solidified and disposed of. Numerous laboratory chemicals located in the abandoned buildings were lab-packed and removed as hazardous waste. Extensive mercury contamination was removed from several buildings on-site. Fifty-nine tanks, containing approximately 111,300 gallons of petroleum related waste remained on-site after this clean-up action due to the CERCLA petroleum exclusion provision.

After the CERCLA clean-up was completed, the trustee obtained the services of numerous scrap metal salvagers. These individuals scrapped numerous tanks and associated piping. Due to their scrapping efforts, tops and sides of tanks were cut off which allowed rainwater to collect in the tanks and the petroleum materials to directly discharge onto the ground. Because the site sits on a steep hill, run-off from rain events allowed these petroleum materials to discharge into a drainage ditch, that runs through a wetlands and discharges into Village Creek which discharges into the Neosho River, the source for drinking water for the city of Chanute.

On October 28, 1996, EPA issued a Unilateral Administrative Order, pursuant to Section 7003 of the Resource Conservation and Recovery Act, (RCRA), 42 U.S.C. 6973, to Mr. Moore and associated salvagers to cease dismantling activities on-site. This measure was taken after determining that there was imminent and substantial endangerment to human health and the environment because of the release and discharges, or threatened release and discharges, of oil and hazardous and/or solid wastes from the Site. In January 1997, this case was turned over to the Department of Justice for action. As of February 17, 1998 there were 27 tanks remaining on-site containing approximately 80,000 gallons of petroleum related materials.

#### TANK CONDITIONS:

During the 16 years that the refinery has been closed, the tanks had continued to rust and degrade. No maintenance, corrosion control, leak testing, etc., had been done to maintain the integrity of these tanks. Numerous tanks had no berms around them to serve as secondary containment in the event of any spills or tank failures. Oily water around some of the tanks that did have berms, indicated that the tank contents had leaked out. This had caused extensive soil contamination around and under the tanks. Salvagers further destroyed numerous tanks by cutting off tank tops and leaving product in the bottoms of the tanks, causing the contents to overflow onto the ground. None of the tanks that were onsite, were servicable due to their deteriorated condition.

Rusting underground and above ground piping was located throughout the site. The majority of the pipes still contained petroleum products. When salvagers worked on the site, improper techniques of cutting pipes which contained flammable petroleum products had resulted in numerous fires and petroleum discharges. Some of these fires crossed the road and burned out



wetland vegetation and fields. On several occasions, salvagers set tank contents on fire to remove the petroleum material in the tanks. Since the refinery is located adjacent to a housing area, the thick black smoke posed a substantial threat to public health and welfare of residents. There is evidence that petroleum contamination has reached ground water.

## EPA ACTIONS

On December 29, 1997, the Coast Guard signed an Interagency Agreement with EPA to address the petroleum contamination and threat of petroleum materials release into waterways. This initial IAG was for \$3,536,290. On February 17, 1998, EPA mobilized to the site to begin removal activities.

On September 28, the Coast Guard approved an increase of funding of \$2,386,450. This increase was due to the fact that during the course of the excavation, several large petroleum material burial areas were found that were oozing up to the ground surface. Excavation of these areas substantially increased the amount of petroleum contaminated soil/sludge to be excavated and disposed of.

On January 21, 1999 the Coast Guard approved an increase of funding of \$67,000. This increase of funding was requested to address an old pipeline which belonged to the MARCO site. An extension of the project period to 01/15/00 was also requested at that time. The circumstances surrounding the pipeline are as follows. On October 8, 1998, oil was discovered outside the MARCO property fence, to the east of the site in the drainage ditch. Due to the location of this oil, it was determined that the oil had not come from the MARCO property. It was unclear where the oil came from. At the time a clay cap was placed on the area to temporarily keep it from releasing into the drainage ditch. A fiber optic phone line is located in this area at an unknown depth so excavation at the time was not initiated to find the source of the oil.

On 21 October 1998, the director of the Neosho County Public Works Department visited the MARCO site. The issue of the oil in the drainage ditch was discussed and the engineer indicated that the oil may have come from an old crude oil gathering line that entered the MARCO property at the location of the oil spill that was found on 8 October. Heavy rains on 4 October may have filled the open portions of the pipeline with water which pushed the oil/water in the pipeline to the location to the east of the MARCO property.

On 22 October, the County engineer provided a 1 May 1949 map of the crude oil gathering pipeline which belongs to the MARCO property. In one drainage ditch, the county had broken the line during ditch maintenance. The county had secured the line. EPA found a small amount of soil contamination in this area. Boom was placed in the drainage ditch to ensure that the oil would not be released to other areas of the waterway until a plan addressing the pipeline could be arranged.

On 1 and 2 November, due to heavy rains, flooding conditions occurred in the area surrounding the Neosho River and Village Creek. When the flood waters began to recede rushing



water from fields was found to be undercutting the soil banks surrounding the MARCO pipe. On 22 November, two leaks were discovered in the pipe. Approximately 15 gallons of crude oil was discharged into the drainage ditch. Clamps were placed on the pipe as a temporary measure.

On 12 February 1999, the EPA OSC contacted the Coast Guard requesting an increase of \$1,500,000 to complete the project. This increase was requested due to the amount of heavily contaminated soil located on the downgradient portion of the property and also the fact that the pipeline removal project has been found to require a different, slower, thus more expensive approach to address the removal of the oil from the pipe and removal of the pipe in drainage areas. The majority of the pipeline is located on county right-of-ways and is filled with a crude oil/water mixture that spills into county ditches and waterways when the pipeline rusts and breaks, during normal ditch maintenance, and when farmers have tried to correct drainage problems on their fields and accidentally cut into a MARCO line.

At the onset of the pipeline removal project, it was believed that there would not be a large amount of crude oil/water mixture found during the removal of the line and only a short section of the pipeline would have to be removed. This was based on the information that EPA had received that the pipeline had not been used to deliver crude oil to the refinery since the 1970s as its use had been discontinued several years before the refinery went bankrupt due to the massive leaks in the pipeline at that time. However, after removing 13,345 feet of pipe and recovering 9,137 gallons of oil in a line that in some areas has rusted through, the method of pipeline removal had to be adjusted to ensure that no oil releases occur during the pipe removal. Also, due to the very low price of crude oil at this time (\$7.00/ barrel compared to \$17.00/barrel one year ago) the material retrieved from the pipeline has proved not to be of any value to recycle/reuse. Therefore, the cost of disposal of this material has also contributed to an increase of the original projected cost of the pipeline removal.

This current increase was also requested due to the fact that the southeast portion of the property, the most downgradient portion, contains the most highly saturated soils. A review of old documents relating to the site indicate that just six years after MARCO began operations, the State Department of Health began sending letters to the refinery indicating that large amounts of petroleum materials were observed being discharged or running off site. Various agencies from the State of Kansas expressed their concern to the refinery about oil discharges on an almost annual basis. In fact, a letter dated April 15, 1959, discusses a leak that occurred which caused extensive oil releases into Village Creek and the Neosho River. It was believed at the time that the phenol taste in the city drinking water supply occurred due to the spill at MARCO. (Memo attached)

These activities are pursuant to Section 311, Public Act 101-380, in accordance with the National Contingency Plan. The National Pollution Fund Center (NPFC) will confirm all reimbursements following receipt and review of EPA documentation for each activity. This money will be used for emergency actions and cleanup oversight.



Attachments:

Attachment I - Detailed Cost Analysis

Attachment II - Scope of work

Attachment III - April 15, 1959 Memo from State Agency on MARCO contamination

Attachment IV - February 14, 1986 KDHE Preliminary Assessment Report for the Mid America Refinery. (Details chronological events in MARCO's history, i.e., spills, ownership, etc.)



ATTACHMENT 1  
Revised Detailed Cost Analysis

It is estimated that the work on this site will take approximately 17 months. The removal began on 17 February 1998 and is expected to be completed by July 1999.

Region 7 EPA Costs

|                 |               |                  |
|-----------------|---------------|------------------|
| Personnel Costs | 4,320 hours = | \$162,800        |
| Travel Costs    |               | <u>25,840</u>    |
| <b>TOTAL</b>    |               | <b>\$188,640</b> |

Superfund Technical Assessment & Response Team (START)

|                 |               |                  |
|-----------------|---------------|------------------|
| Personnel Costs | 4,320 hours = | \$261,360        |
| Travel Costs    |               | <u>23,760</u>    |
| <b>TOTAL</b>    |               | <b>\$285,120</b> |

CLEANUP CONTRACTOR COSTS

|                         |              |
|-------------------------|--------------|
| Contractor Personnel    | \$ 2,412,763 |
| Contractor Travel       | 416,238      |
| Contractor Equipment    | 820,736      |
| Supplies/Materials      | 209,843      |
| Transportation/Disposal | 2,704,000    |
| Backfill                | 452,400      |

**CLEANUP CONTRACTOR TOTAL**    \$7,015,980

**TOTAL PROJECT COST**                    7,489,740



## ATTACHMENT II

### Scope of Work

The Contractor shall, at the discretion of the OSC:

Develop and implement a site-specific work plan including a proposed time line;

Develop and implement a site-specific health and safety plan;

Provide air monitoring, and site security as necessary: (No air monitoring or site security has been needed onsite).

Provide utility hookups, and command post;

Access refinery vessels and piping and remove oil and sludges from the refinery;

Transport and off-site disposal of oil from the refinery;

Remove all unserviceable tanks to access contaminated soils beneath tanks.

Containerize and treat oily water.(Utilizing the Springfield Belle, if available)

Remove oil-contaminated soils from beneath refinery structures;

Remove and dispose of sludge pit wastes.

Perform a treatability study on the oil-contaminated soils to determine the most cost-effective way of treating these soils on site; (Due to the massive amounts of contaminated soils and depth of contamination, remediation was determined not to be an option for cleanup of this site.)

Treat (or transport and dispose off-site) the oil-contaminated soils;

Final grading and vegetation of disturbed areas.

#### AMENDED TASKS TO THE SCOPE OF WORK:

Remove MARCO crude oil gathering pipeline and oil in areas where there is a threatened release to a waterway or potential release to a waterway.



*Attachment IV*

PRELIMINARY ASSESSMENT REPORT

for the

MID AMERICAN REFINERY

Chanute, Kansas

|        |                      |
|--------|----------------------|
| Site:  | Mid-America Refinery |
| ID #   | KSD 84091545         |
| Depth: | 1.5                  |
| Other: | 2-14-86              |

Prepared by

Rick L. Bean

Bureau of Oil Field and Environmental Geology

February 14, 1986



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Mid-American Refinery

NE SE 17-27-18E

Chanute, Kansas

A. Site Description

The Mid-American Refinery was a crude processor in operation from 1934, until it was shut down, in February 1981. At the time of full production, the Mid-American Refinery site, herein referred to as MARCO produced approximately 2,800 barrels per day of crude stock. This in turn, was refined into 350 bbl/day of diesel fuels, 550 bbl/day of jet fuels and 700 bbl/day of gas, oil and kerosene. Nine and a half tons/yr of API sludge and an undetermined amount of leaded material mixed with filtrol clay was disposed of on site.

Four and six tenths (4.6) acres of the original refinery site is owned by Fairway Crude, Inc., a crude oil purchasing company. Fairway Crude, Inc., bought this lot, located in the northwest corner of the original site, from Chanute Energy and Refining, Inc., on July 1, 1985.

On February 1, 1986 the remaining 25 acres of the original site was leased to Rose Chemicals for the purpose of developing a PCB destruction plant and reactivating the old refinery. A six month contract was signed by Rose Chemicals, giving them the option to purchase the remaining 25 acres after the initial six month lease had expired.

A complete file history has been included in this report from an extensive file review, and is labeled Appendix A. A summary of significant events is included in Part B.



B. Summary of Significant Events

July 22, 1940: Name of company operating the site is Petroleum Products Company.

May 29, 1943: Facility sold to Missouri Farmers Association (M.F.A.).

January 11, 1956: MFA Refining Company was sold to Mid-American Refining Company of Chanute, Kansas.

March 11, 1959: Indications of heavy oil losses in a watercourse draining to Village Creek.

March 12, 1959: Heavy oil, up to 3 inches, was found in drainage ditches flowing away from the site.

April 14, 1959: Complaint of an oil loss.

April 15, 1959: Mr. Cunningham, manager of the plant, indicated that an accidental break had occurred to a line to the fuel tanks. Strong tastes occurred in the Chanute public water supply.

June 3, 1965: Oil overflow from separator boxes, due to heavy rain. Spilled oil was burned.

March 18, 1969: Noted loss of oil near the refinery.

May 8, 1969: Letter to MARCO from KDHE stating that they need to obtain a permit for the discharge of wastes from their refinery.

May 12, 1969: Complaint from a private landowner that waste from MARCO was running onto property.

June 6, 1969: MARCO indicates that they would be installing additional waste oil separators as well as reworking the containment structures around the tank farm.

October 27, 1969: Noted loss of oil due to heavy rainfall.

November 20, 1969: Application for sewage and sewage disposal.

May 1, 1970: Oil losses along Highway 169 from the facility.

June 9, 1970: Inspection of the site showed severe pollution conditions to exist.

June 13, 1972: Engineering report from MARCO consultant, submitted to KDHE, with provisions to pretreat wastewater and discharge it to the municipal sanitary sewer system.

January 11, 1973: KDHE approves plans for the modification to the water pollution control facilities at the plant.



January 11, 1973: MOA between City of Chanute and MARCO, for disposal of waste from plant into city sewage system.

October 16, 1973: MARCO sold to a group headed by Mr. K.E. McNeal. Mr. McNeal is the President of Kemco Petroleum Co., and Glory Bee Trucking Co.

October 21, 1975: An Industrial and Hazardous Waste Survey was completed upon the site.

April 15, 1980: Producer Group, Inc. is the new owner of the site.

May 20, 1980: Identification of four critical solid waste disposal areas.

October 14, 1981: MARCO ceased operations.

January 6, 1986: Letter to owner stating that the facility is on the list of sites which may pose a potential threat to the public health or environment.

C. Preliminary Inspection

A preliminary inspection was performed on this site during February 5, 1986 by Bill Thornton, District Geologist and Rick Bean, Geologist. Their field notes are included in Appendix B and were used to complete the actual preliminary assessment form included in Appendix C.

D. Off-Site (Perimeter) P.A. Inspection

MARCO is a 29.6 acre site that is located on the northern edge of the city limits, of Chanute. The approximated dimensions of the site are 993 feet, north to south, by 1320 feet, east to west. The front portion of the site faces east, on the west side of Highway 169 (Santa Fe Ave.) Three businesses are found east of US 169, opposite the site. The businesses are Corkey's Used Cars, Penine Resources, and an abandoned warehouse/motel. Along West Hickory Street which trends parallel to the south side of the site there are six private houses, a Fina Station and a motel. Three private houses are on the west side of the site and the Ash Grove Cementing Plant resides to the northwest.





ASH GROVE  
Cementing  
Plant

WILLIAMSON HILL  
AREA SKETCH  
(NOT TO SCALE)

ASH GROVE ROAD

FAIRVIEW  
CRUDE

PLANT  
AREA

LOTS

GARFIELD

CON  
US  
CA

FE  
RE

SANTA FE ST

Adm  
Wor

US 169

Adm  
Mn

\* GATE

Fence

WEST HICKORY STREET

STURBEN

FOREST

NORTH LEE

GRANT

FINA  
STATION

MOTEL

2/1/43



After a complete review through the water well records, it was found that only one private well exists within a one mile radius of the MARCO site. Actual field verification of this well was not included in the off-site inspection. Appendix D includes water well records of wells that are within one mile of the MARCO site.

Evidence of possible off-site contamination was noted in two areas around the plant's perimeter.

Historically, files indicated that various problems had occurred, near the oil separator/wastewater collection facility. Abnormal amounts of precipitation and run-off from on-site would exceed the holding capacity of the collection facility, allowing off-site surface migration to occur, eventually reaching Village Creek. Direct inspection of this area revealed signs of past off-site hydrocarbon contamination, near the plant's perimeter. The extent of past off-site contamination was not investigated during the P.A. inspection.

An area near the northwest corner of the site, next to a BS pit showed lateral on-site drainage emptying into a ditch along side of Ash Grove road. Contamination of this off-site drainage could not be verified, although it was highly probable.

E. On-Site P.A. Inspection

The Mid-American Refinery is located on the side of a hill, and all runoff, uncontaminated and contaminated, is directed towards the base of the hill along highway 169, east of the site. An oil separator and



collection facility is located at the base of the hill, and receives most of this runoff. Apparently the holding capacity of the collection facility is exceeded by the amount of runoff from on site. This is evident in areas around the collection facility, where oil staining has occurred.

During normal operations at the MARCO site, effluent water from the oil separators is pumped back uphill to a two acre pond, via the pump station. This water is then discharged into a city sanitary sewer, through a January 11, 1973 agreement between the City of Chanute and MARCO. Files indicate that the discharged water is not monitored. Diking around the holding pond showed no signs of breakage or leakage and is assumed to be adequately constructed..

There appears to be a small topographic ridge along the western edge of the site. This ridge allows internal drainage, from the central areas of the site, to move laterally, trending northward toward Ash Grove Road. In the northwest corner of the site, the lateral migration has extended into a pond where excessive amounts of fluids, from sources such as drum piles, leaky pipes, runoff etc., are migrating past the diking into an area of pooled water along Ash Grove Road. A small breakage in the diking around the northern flank of the pool has allowed moderate amounts of this fluid to escape the plant's boundary and flow down a drainage ditch along Ash Grove Road. Another possible contributor to this internal flow is seepage from a BS pit. The BS pit, which is filled near capacity, appears to have stable diking, approximately 6 feet in height. It was evident from direct observation that several areas around the BS pit showed signs of past and present leakage.



Many above ground tanks that exist at the site were checked for the presence of product. A majority of the tanks that were checked, appeared to be empty, to nearly empty. Spill containment features around most tanks appeared to be adequate, although several containment pits held large amounts of free floating hydrocarbon. Groundwater contamination is potentially high from the long storage intervals of these fluids in the containment pit area.

A generalized description of the geology, hydrology and soils has been included in Appendix E.

F. Investigative Considerations

A site map has been submitted by Walter Carolan, President of Rose Chemicals, which includes the location and identification of all prominent on-site structures such as buildings, ponds, process facilities, fences, roads, etc. The map also includes site topography, with a contour interval of two feet, and some elevations. Verifications and additions to this map will be done during the investigation and a final map will be developed, which will include surface elevations of standing water, elevations and locations of drainage ditches, monitoring well locations, property boundaries and sampling locations.

Due to the large number of metal structures, tanks and piping at the MARCO facility, an extensive geophysical investigation and metal detector survey will be impossible. Localized geophysical testing can be performed around the BS pit and pond in the northwest corner to help determine the actual areal extent of the buried material. The metal



detector will also be used in localized areas, with emphasis on finding buried drums around old disposal areas.

Proposed monitoring well locations have been tentatively selected and are indicated on Map #1. These locations were selected from the following list of factors.

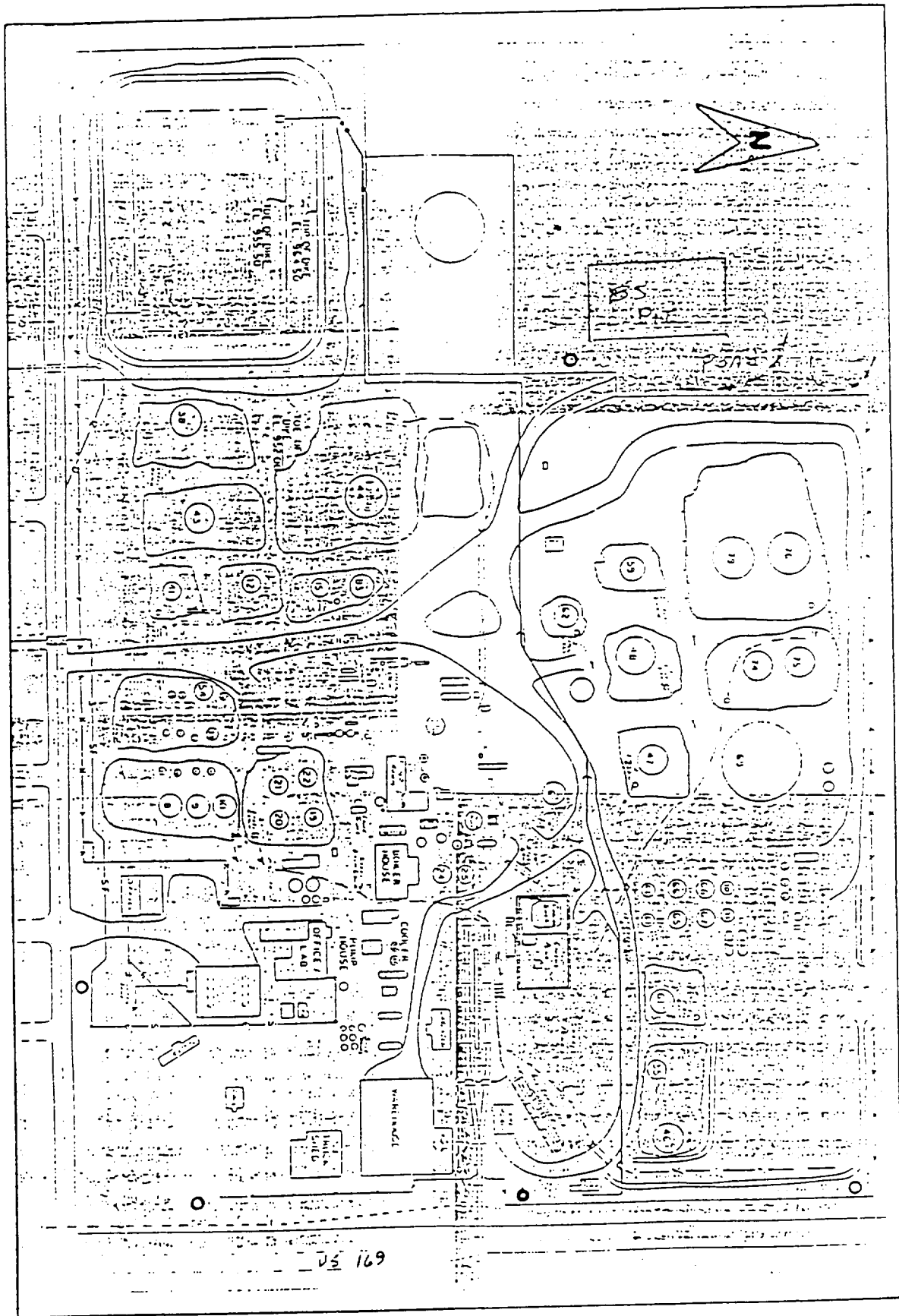
1. Estimated groundwater gradient.
2. Accessibility to drilling locations.
3. Localized geology.
4. Flow direction toward populated areas.
5. Location of alleged contamination.

Final determination of monitoring well placement will be evaluated after completion of the localized geophysical and metal detector surveys. These locations will be approved by the Program Manager before actual drilling is performed.

A complete tank survey will be conducted at this site to determine the number of tanks, the number of tanks containing product, the construction of the spill containment pit and the estimated amount of fluids (water/product) contained in the pits. A complete record listing will be maintained during this inventory.

All other proposed tasks set forth in the work plan shall be performed as so stated, and direct reference should be made to the work plan.





US 169



G. Conclusions and Recommendations from the P.A.

1. Historically the holding capacity of the separation facility was inadequate during periods of abnormal precipitation. Evidence of overflow and possible, past off-site surface migration was present. Areas around this facility showed hydrocarbon staining and past levels of high water. Calculations need to be performed to ascertain the holding capacity of the collection facility and determine the pumpage amounts of the pump station. Diking should be installed along the east side of the site to assure that high waters from excessive runoff are contained within the plant's boundaries. Investigation of off-site drainage will be performed to determine the extent of past surface contamination, if any exists.
2. Numerous tanks exist at the site, and need to be checked for product storage. A complete inventory will be conducted.
3. Unidentified drums, throughout the site, must be tested and identified, before any clean up procedures are performed.
4. Spill containment pits should be cleaned up and diking checked for stability.
5. Several areas around the filled BS pit showed signs of possible seepage, which might be contributing to the lateral internal surface drainage. The BS pit needs to be cleaned up and the sludge disposed of, in an appropriate manner.



6. Internal pooling and lateral surface migration is accumulating in a pond and a pool of standing water, inside property boundaries, along Ash Grove Road. Improper diking around this pool of standing water is allowing the internal on-site drainage to escape plant boundaries, off-site. Areas near this pooled water, along Ash Grove Road, needs to be adequately diked.
7. During the preliminary assessment, refinery odors were present. An ionizable gas detection unit will be used to identify possible toxic air-borne substances.
8. Populated areas exist near the MARCO site on three sides and must be considered during aspects of the investigation.



### References

City of Chanute; Public Files.

Kansas Department of Health and Environment; Agency files.

Kansas Water Data Base; Water well record files.

Keroher R.P., and Kirby, J.J., 1948, Upper Cambrian and Lower Ordovician Rocks in Kansas: Kansas Geol. Survey Bull. 72, 140p.

Jugmann William L., 1966, Geology and Groundwater Resources of Neosho County, Kansas: Kansas Geol. Survey Bull. 183, 46p.

United States Department of Agriculture, 1982, Soil Survey of Neosho County, Kansas: Soil Conservation Service, 99p.



APPENDIX A

FILE REVIEW



History of the  
Mid-American Refining Company, Inc.  
North Santa Fe  
Chanute, Kansas - Neosho County  
NE SE Section 17, T27S, R18E

- July 22, 1940 : Letter indicates that the name of the company operating at the site had been Petroleum Products Company.
- September 25, 1940 : Letter indicates that Petroleum Products Company is trying to purchase additional land for the purpose of constructing an impounding reservoir to contain the refinery wastewater.
- May 29, 1943 : Letter indicates that ownership of the refinery had changed hands and that it was now called the Missouri Farmers Association (M.F.A.) Refining Company.
- June 15, 1943 : Letter from M.F.A. Refining Company to KDHE indicating that they will install oil/water separators to eliminate the discharge of oily wastes from their plant property.
- January 11, 1956 : Notification was given to the department that the M.F.A. Refinery was sold to a company known as Mid-America Refining Company of Chanute.
- March 11, 1959 : Indications of heavy oil losses in a watercourse draining to Village Creek.
- March 12, 1959 : No oil had reached the first road crossing downstream. Heavy oil found (up to 3 inches deep) in pools.
- April 14, 1959 : Complaint of a new oil loss. Meeting was set up with company to discuss each spill complaint.
- April 15, 1959 : Mr. Cunningham, manager of plant, indicated at the meeting that an accidental break had occurred to a line to the fuel tanks. Plans were made for clean-up. Strong tastes occurred in the Chanute public water supply.
- September 1, 1961 : Memorandum to the file indicating that the refinery has an approximate capacity of 2600-2700 barrels of oil per day and that the principal finished products include gasoline, kerosene, diesel fuels, and asphalt. Only waste treatment device in use at the plant is an oil separator.
- June 3, 1965 : Oil overflow from separator boxes, due to heavy rain. Spilled oil was burned.



October 10, 1967 Waste water analysis:

|           |           |
|-----------|-----------|
| pH        | 8.4       |
| Chloride  | 134 mg/l  |
| Sulfate   | 82 mg/l   |
| Iron      | 0.83 mg/l |
| Mn        | 0.19 mg/l |
| Phosphate | 1.6 mg/l  |

October 31, 1968 : Waste water analysis:

|           |           |
|-----------|-----------|
| pH        | 7.1       |
| Chloride  | 134 mg/l  |
| Sulfate   | 94 mg/l   |
| Iron      | 0.57 mg/l |
| Mn        | 0.16 mg/l |
| Phosphate | 0.60 mg/l |

- March 18, 1969 : Noted loss of oil - near the refinery, east of the highway.
- May 8, 1969 : Letter to MARCO from KDHE stating that they need to obtain a permit for the discharge of wastes from their refinery.
- May 12, 1969 : Letter to department from Mrs. John Schoenhofer, a landowner near the refinery. Her complaint was that MARCO's waste was running across her property via a waterway and low lying areas on her property were filling with slush and waste.
- May 28, 1969 : Letter from MARCO to Rex Chainbelt, Process Equipment asking for prices on separator boxes.
- June 6, 1969 : Letter from MARCO indicating that they would be installing additional oil/water separators as well as reworking the containment facilities around the tank farm area. This would hopefully eliminate the numerous complaints directed to the department concerning the discharge of oily water from the refinery site. From the correspondence it seemed quite evident that there was a significant amount of contaminated stormwater runoff leaving the plant property.
- June 9, 1969 : Letter to Mrs. Schoenhofer from department indicating that her problem is primarily a drainage deficiency and not pollution.
- October 27, 1969 : Noted losses of oil due to heavy rainfall.
- October 27, 1969 : Letter from the company advising KDHE that they had placed an order for a new oil/water separator. It will be sized to handle a significant portion of the runoff from the plant property.
- October 29, 1969 : Letter to MARCO from a consultant, stating that the northeast corner of the site, where all surface drainage goes is 4.5 acres.
- November 6, 1969 : Plans for the new skimmer equipment and drawings sent to the Central office.



November 17, 1969 : Letter from Litwin Corporation to MARCO stating the specifications of the oil-water separators:

Oil recovery trap 175 GPM per channel  
Total capacity 500 GPM per channel  
or 1000 GMP Total

November 20, 1969 : Application for sewerage and sewage disposal. In this application, the company states that the wastewater consists of boiler blow down, process water which is not reclaimed, and surface drainage. The company also states that the water is not detrimental to the streams. The amount of process water is about 60 gpm or 86,000 gal/day. The storm water drains from 4.5 acres. The company further states that oil is occasionally lost from tanks, pipe breaks, etc. but that this is removed in the API separator. The present plan is to install oil skimmers on the API separator.

November 21, 1969 : The Application for Permit and the proposed re-vamp of the Oil Recovery System was sent to KDHE by MARCO.

November 24, 1969 : Amount of water released from plant approximately 60 gal/minute or 86,000 gal/day.

April 7, 1970: Waste water analysis:

|           |            |
|-----------|------------|
| pH        | 7.6        |
| Chloride  | 241.0 mg/l |
| Sulfate   | 165. mg/l  |
| Iron      | 1.1 mg/l   |
| Mn        | .68 mg/l   |
| Phosphate | 2.2 mg/l   |
| Phenol    | 5. ppb     |

May 1, 1970 : Oil losses coming from a new passageway. Oil spilled was burned and a straw dam was built in a ditch along Highway 169 to absorb, escaped oil.

June 9, 1970 : Memorandum stating that inspections of the plant showed severe pollution conditions to exist.

November 30, 1970 : Memorandum to bring up the discussion to get WPC structures at the MARCO facility. Recommend that a holding pond with a suitable trap be constructed ahead of the separator.

March 24, 1971 : A clog in a pipe caused the overflow of oil.

April 29, 1971 : Letter from MARCO to KDHE informing them of an extension to the oil separator to improve efficiency.

July 2, 1971 : A letter from KDHE requesting submittal of an engineering report, securing a permit, and construction design.

December 8, 1971 : Memorandum to the file stating that Wilson & Company Consultants had completed a draft WPC report, cost for clean-up and implementation, was estimated to be 100,000 dollars.



January 11, 1973 : Memorandum of Agreement between City of Chanute and MARCO, for disposal of waste and sewage from plant into city sewage system.

Agreements include:

- 1. MARCO shall construct a preliminary treatment system.
2. Introduce such a system into the present sewage collection facility.
3. MARCO pays determined fee to city.
4. City has right to discontinue acceptance of waste if company fails in any agreement.
5. Agreement may be terminated by either party.

August 29, 1973 : Letter from MARCO estimating that the Wastewater Treatment Facilities are 85% complete.

October 1, 1973 : Letter to the department advising us that the connection to the municipal sewer system has been completed.

October 12, 1973 : Request from department to inspect wastewater treatment facilities.

October 16, 1973 : Newspaper clipping indicates that the Mid-America Refining Company was sold to a group headed by Mr. K.E. McNeal of Tulsa, Oklahoma. Mr. McNeal is the President of Kemco Petroleum Company and Glory Bee Trucking Company.

October 29, 1973 : All correspondence referred to Mr. Justus O'Reilly.

March 22, 1974 : Complaints to KDHE about young children having easy access to the wastewater treatment facility. Requests fencing around facility by June 1, 1974.

March 29, 1974 : Letter from MARCO agreeing to the requested fencing.

August 11, 1975 : Letter from the department indicating that since all the wastewater was being discharged directly to the municipal sanitary sewer system that there was no need for them to obtain an NPDES permit.

October 21, 1975 : An Industrial and Hazardous Waste Survey was completed upon the site.

November 4, 1977 : A conference held to discuss, MARCO's plant modifications. MARCO's modification plans included:

1. Increasing their crude oil process capacity from 2800 barrels/day to 10,000 barrels/day.
2. Additional cracking facilities to increase gasoline production.
3. To treat and recycle as much water as possible.



May 5, 1972 : A letter from Gyula F. Kovach to Oscar Cunningham, President, Mid-America Refining Company stating that we have definite knowledge that the engineering report done by Wilson & Company had been completed for several months. It also stated that no discharge permit will be issued under the Refuse Act Permit Program without securing state certification for discharge. Without a state permit this office considers your operation a direct violation of K.S.A. 65-164 and 65-165 and will recommend the Board of Health to proceed with legal action. A deadline was then set for having the report filed by May 20, 1975.

May 11, 1972 : Letter from MARCO requesting an additional ten days for filing of report.

May 16, 1972 : A letter giving a 10-day extension for filing the engineering report with a new deadline of May 30, 1972. The reason for the extension request was the replacement of a water supply piping to reduce the process consumption, by as much as 25 percent. This, of course, would have an effect on wastewater discharge. Another improvement that will be made, is the installation of a new oil separator on the discharge from their vacuum unit and desalter. The construction should be completed by July 1, 1972. The new oil separator should remove about 50 percent of the free oil from the area.

June 13, 1972 : Engineering report from Wilson & Company submitted with provisions to pretreat the wastewater and discharge it to the municipal sanitary sewer system.

June 14, 1972 : Memorandum to the MARCO files, a short file history and an inspection of the site. Four main items were looked at.

1. The flow of the process water to the API separator and oil trap. It was indicated that some of the oil was getting past the belt skimmers and would have to be skimmed by hand from the third compartment.
2. The new API located at a higher elevation than the previous one.
3. The runoff water is the most critical item.
4. The general condition around the API and railroad tracks is, at best, poor. There is evidence of many oil spills. The sludge and silt from the old API is dumped into an old cooling pond. At this time the pond is one-third full of sludge the remaining surface area is covered with a thick oil skum. Oscar Cunningham stated that in wet periods the water table in this area is within three feet of the surface.

January 11, 1973 : Department approves plans and specifications for the modification to the water pollution control facilities at the plant. These essentially provide the tie-in capability to the municipal sanitary system.



May 27, 1980 : Letter from Max Beech to the department, indicating plans for the 4 critical waste disposal areas in letter to MARCO dated May 20, 1980.

1. North holding pit will be filled with fly ash.
- 2. Abandoned asphalt pit will be salvaged by extracting asphalt material from the pit.
3. To level and cover with top soil the accumulation of solid waste along the plant service road.
4. No decision on the B. S. pit.

May 30, 1980 : Backflow prevention was successfully installed.

June 24, 1980 : Letter to MARCO specifically defining dates for clean up of the 4 critical waste areas.

October 14, 1981 : Memorandum to the file summarizing the most recent telephone conversation with the corporate management at the refinery. The refinery is no longer operating but they are providing blending operations, on a demand basis, for other companies. It was agreed that a one year Non-Q permit application would be forwarded to Mr. Max Beech. Our District Staff conducted a brief inspection of the facility to determine what steps, if any, are required to cleanup areas which could result in contaminated stormwater runoff leaving the plant property.

November 14, 1981 : File Review Summary

April 5, 1983 : Telephone conversation summary from Max Beech. Beech indicated possible sale and start up of the facility.

October 14, 1985 : Telephone conversation with Bill Thornton SEDO, Western Petrochemical is now Chanute Engineering and Refining Company, contact person and shareholder is G.W. Delozier, Victory National Bank, P.O. Box 312, Nowata, Oklahoma (918) 273-3442.

kaa/SC



KDHE's comments for consideration:

1. Increase in the capacity of the pumps at the API system.
2. Holding pond be redesigned in order to maintain a non-discharging status.
3. Facility utilize the city's sewer system for sanitary waste.
4. Monitoring of the flows from the retention lagoon to the city sewer system.
5. MARCO should write a policy for manual skimming procedures.

April 15, 1980 : Inspection of the site, and a Hazardous Waste Generator's Survey completed. Indicated problem areas and that the new owner was Producer Group, Inc. Max Beech, President. Problem areas included:

1. Overflow from API separator after rainfall goes to a ditch east of site.
2. Dump area with no permit.
3. Oil overflowing to North ditch during rain.
4. Sludge pond, B. S. Pit and Asphalt pit need clean-up.

May 5, 1980 : Request the installation of an approved backflow prevention system to stop possible contamination of the city water system due to cross connection of product lines and water supply lines.

May 6, 1980 : Telephone conversation between KDHE and Max Beech. Beech indicated possible shut down of plant, because of the economy.

May 8, 1980 : Requested improvements to the site during a site inspection.

May 20, 1980 : Identification of four critical solid waste disposal areas:

- 1) The holding pit located north and adjacent to the wastewater collection and pumping facility at the east side of the plant.
- 2) The abandoned asphalt pit located in the northeast corner of the plant property.
- 3) An accumulation of solid waste along the plant service road in the northwest portion of the plant property.
- 4) An abandoned B. S. sludge pit located in the northwest portion of the plant.

Suggested that all of the wastes be deposited in a county sanitary landfill. However, on-site burial could still be a consideration, with the use of an absorption material.



FIELD NOTES AND SUMMARY FROM THE  
PRELIMINARY ASSESSMENT  
OF THE MID-AMERICAN REFINING SITE  
NESE 17-27-18E  
CHANUTE, KANSAS NEOSHO COUNTY

2/5/86

1:37 PM Beginning Time  
4:14 PM Ending Time

Inspectors: Rick Bean - Geologist  
Bill Thornton - Environmental Geologist

Weather: Overcast skies, 43°F., light winds N-NE,  
1½" rain occurred on February 2, 1985.

Aerial Description: The site is surrounded by city streets on the north and south sides and U.S. Highway 169 on the east side. Land exists on the west side of the site. Much of the plant site sits upon a hill, with the bottom of the hill sitting next to U.S. Highway 169 on the east side. The area covers approximately 29.6 acres of land, and the entire site is encompassed with steel fencing. See sketch #1.

Before performing the actual field inspection (P.A.) a meeting between Walter Carolan, President of Rose Chemical, Max Beach, employee of Rose Chemical, Bill Thornton, Southeast District Office Geologist and myself took place. I informed Mr. Carolan, of the current status of the site and what our (KDHE's) purpose and goals for the inspection were.

We were updated on the current events of the site by Mr. Carolan. Below is a brief summary:

The Mid-American Refinery property was sold to Rose Chemicals, PCB Division in a lease purchase agreement by C.W. Delozier through Robert Claus, legal representative of Mr. Delozier. The contract was for a 6 month lease agreement with the option to purchase after the 6 month period. Two companies would be involved Rose and Waste-Tech. Services, Inc., a subcontractor of Rose Chemicals. Plans include reactivation of the refinery and the establishment of a PCB destruction plant. The agreement was effective on February 1, 1986. Operation of the refinery is linked to the destruction plant because heat energy from waste oil burned in the incinerator can be used to power the refining processes. This would make operating costs more economically feasible.

Approximately 25 acres of the site is included in Rose Chemicals' lease agreement.

4.6 acres in the northwest corner of the original refinery property is now owned by Fairway Crude, Inc., a crude oil purchasing company. This operation began on July 1, 1985.

Mr. Carolan suggested that the actual investigation of the Mid-American site, be performed as soon as possible, so that he might determine his options in the lease agreement. A meeting needs to be set up to discuss future permitting and the investigation.



APPENDIX B

FIELD NOTES



Many above ground storage tanks exist at the plant site with diking around each tank. Several tanks exhibited more hydrocarbons present than actual water, in the spill containment area. Testing of many of the tanks revealed them to be empty of product. Diking around most of the tanks appeared adequate although infiltration into the groundwater seemed highly probable.

Throughout the site we found various drums and other containers, some of which were leaking, and most were unidentifiable. Those containers which had sufficient labeling included the following substances:

Glacial Acetic Acid  
Tretolite  
Oil Bronze Liquid Organic Dye  
Boiler Water Treatment

A drum and trash pile were found near the west central part of the site. Several of the drums at this pile were partially filled with an unknown substance(s). It was evident that possible leakage from these drums was entering a surface migration route trending northward.

Another contributor to this internal northward surface migration route was a leaky line and valve. Pooling of hydrocarbons existed on the surface around this leak, and observed leakage was occurring. This northward drainage seemed to be at a crest break in the hill and the fluid appeared to be moving laterally; and not downhill toward the oil trap and skimmers. A BS pit near the northwest corner might also be a contributor to this internal drainage. A small pond and area of pooled water, which exist at the north edge of the site seem to be the receiving units. Inspection of this area revealed a drainage pipe between the pond and the pool. The final containing structure at the northern most edge of the site had a break in it, thus allowing surface drainage to occur down the ditch along side of Ash Grove Road (off site). See Sketch #2.

The accumulation of solid waste was evident in several areas on site.

1. Area adjacent to the wastewater collection and pumping facility. Waste in this area appeared to be mixed with fly-ash.
2. Large asphalt pit located in the northeast corner of the site.
3. BS pit and pond in the northwest corner of the site. The pit was full of sludge with a hard coating existing over the top.

The final area that was inspected included the southwest corner of the plant site. Waste water that is pumped from the oil trap and skimmers is stored in a large holding pond (approximately 2 acres) in this area. Sufficient diking existed around the pond and no signs of escape was observed. Water from this pond is held then discharged (presumably by gravity flow) through a storm drain. A sample was taken from the pond approximately 3 feet from the bank's edge.



Mr. Carolan assured us that Rose Chemicals would be fully cooperative with KDHE.

#### INSPECTION PROCEDURES:

##### Off Site Inspection:

Many houses and businesses encompass three sides of Mid-American Refinery. The site actually sits outside the city limits, but West Hickory Street which is adjacent to the site on the south is the boundry. Along the front of Mid-American, which is toward the east, bordering U.S. Highway 169, there were three, possibly four businesses. Corkey's Used Cars, Penine Resources, and an abandoned warehouse and motel align U.S. Highway 169. South of the site along West Hickory Street there are six houses, a Fina Gas Station and a motel. West of the plant site, some 160'-200' from the fence line, three houses exist along Garfield Street. To the northwest, near Ash Grove Road the Ash Grove Cementing Plant is in operation.

##### On Site Inspection:

The on site inspection began in the southeast corner of the site and continued along the plant's perimeter. Once an inspection of the on site plant's perimeter was completed the central area of the site was examined. Stops were made during the inspection, at important features such as buildings, drum piles, piping, pits, ponds, etc. and an examination of these facilities occurred.

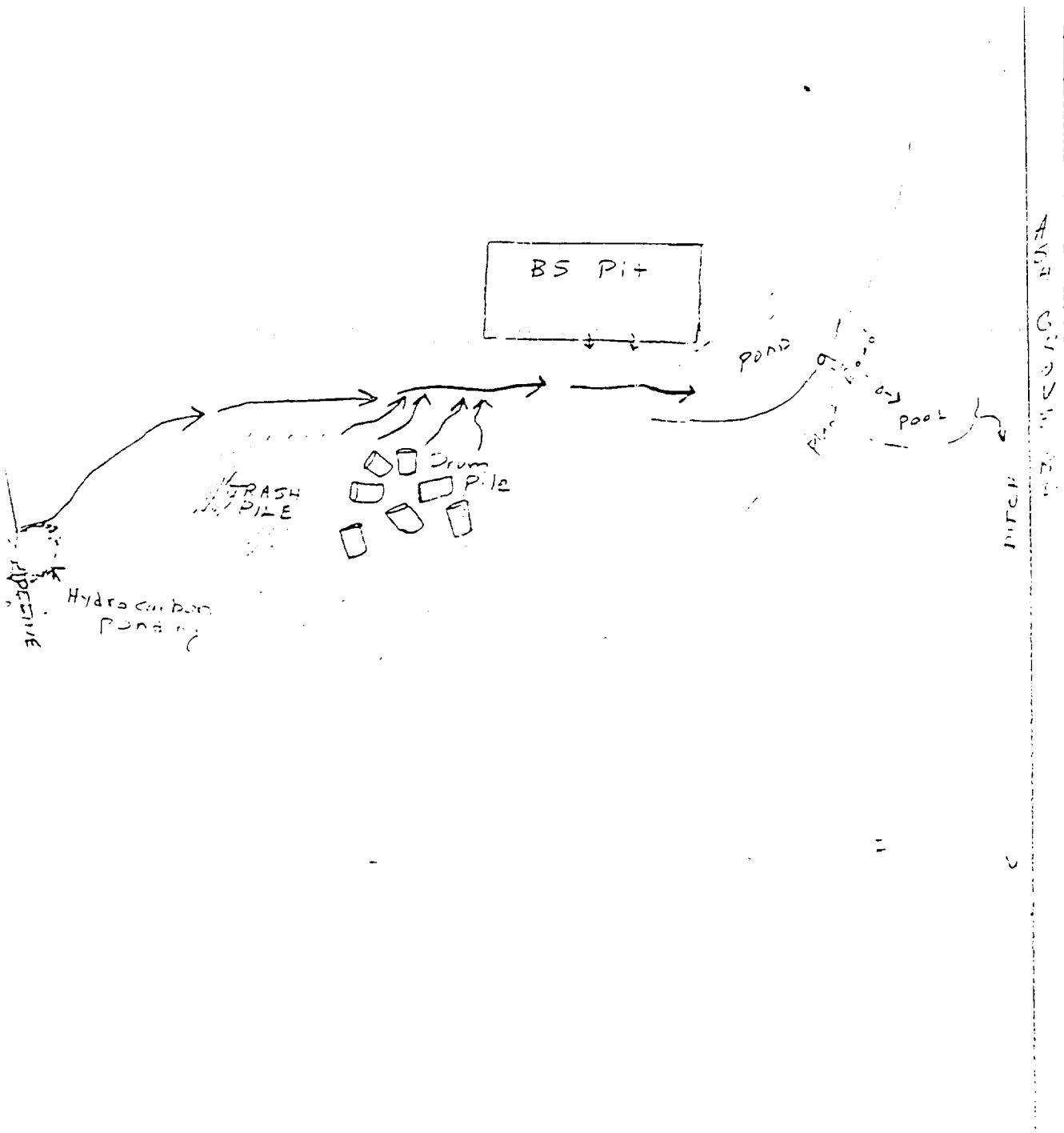
Most of the structures that were in use during Mid-American's production days were still standing. A complete evaluation of each structure was not possible, since an insufficient amount of time was available for the P.A. A map showing each structure would be submitted by Walter Carolan as soon as it was available.

A well was found near the southeast corner of the property boundry. We were informed that it was only 6' deep and cased with 8 inch steel casing. The well was not capped and the water level in the well appeared to be only a few inches from the actual ground surface. Water in the well appeared to be contaminated with hydrocarbons. A sample was taken from the well, although it was probably not a very representative sample.

Inspection of the oil recovery trap, skimmers and pump station revealed that the initial design of this system would allow internal on site drainage to be directed to the oil trap and skimmers, then the waste water would be transported via the pump station uphill to a holding pond in the southwest corner of the site. Once in the holding pond the waste water would be disposed of through the storm drain. A careful inspection of the oil trap and skimmers showed evidence of overflows, occurring. Oily substances were found both on vegetation and the nearby surface around the skimmers just before entry into the pump station. Off site escape of such runoff would be very possible along U.S. Highway 169. The system would seem inadequate during periods of above normal precipitation.



————— Z



US 169

Sketch #2  
NOT TO SCALE

P. 12  
07/19/70



## Attachment III

April 15, 1959

Leonard J. Imhof

Dwight F. Metzler

Oil Losses to Village Creek  
Chanute

On March 11, John Bashor and I made a preliminary investigation of oil wastes in a watercourse draining to Village Creek just north and east of the north city limits of Chanute. Oil losses apparently had been heavy at some time previous to our visit as indicated by the thick deposits along the bank lines all the way from the local Mid-America Refining Company to Village Creek.

On March 12, Bob Williams and John Bashor, Oil Field Section, and I walked over the area again to take pictures of the oil wastes, starting near the Refinery and continuing on to the creek. Both black and white and color films were used to get pictures at several points along the way. These pictures and slides are accompanied by a map made up for the purpose of showing the general area, as well as indicating the points where the exposures were made. Also accompanying the pictures will be a sheet giving a brief description of direction, etc. to correspond to numbers on the picture itself.

The map will indicate that Village Creek in the area where the oil losses were noted flows in two directions around an island for some distance before the channels merge into one. Heavy oil was caught in pools in the area indicated in red on the map, sometimes to a depth of three or more inches. The south channel was choked in several places by driftwood, and it was between these that the wastes were held. On the 12th, no oil had reached the first road crossing downstream.

On the 14th of April, after the colored slides had returned, a new loss was reported by persons unknown. Bob Williams and I made an investigation of this, but found no evidence of recent oil losses at the Refinery. Recent rains had, however, raised the water levels in the creek and flushed some of the oil down-stream. On this date, there was fresh oil clinging to the banks near the first road crossing downstream. A single black and white exposure was made of this, and is indicated on the map.

The Oil Field Section was particularly interested in these losses because

